

WHAT IS CLAIMED IS:

1. A fabric comprising at least one strand comprising a plurality of fibers and having a resin compatible coating composition on at least a portion of a surface of the fabric, the resin compatible coating composition comprising:
- (a) a plurality of discrete particles formed from materials selected from non-heat expandable organic materials, inorganic polymeric materials, lamellar particles having a thermal conductivity of at least 1 Watt per meter K at a temperature of 300 K, non-heat expandable composite materials and mixtures of any of the foregoing, the particles having an average particle size sufficient to allow strand wet out;
  - (b) at least one lubricious material different from the plurality of discrete particles; and
  - (c) at least one film-forming material.
2. A fabric according to claim 1, wherein the resin compatible coating composition is a residue of an aqueous coating composition.
3. A fabric according to claim 1, wherein the resin compatible coating composition is a powdered coating composition.
4. A fabric according to claim 1, wherein the at least one fiber strand comprises at least one glass fiber.
5. A fabric according to claim 1, wherein the at least one fiber strand comprises a plurality of glass fibers.
6. A fabric according to claim 5, wherein the plurality of glass fibers are selected from E-glass fibers, D-glass fibers, S-glass fibers, Q-glass fibers, and E-glass derivative fibers.

7. A fabric according to claim 6, wherein the plurality of glass fibers are E-glass fibers.

8. A fabric according to claim 6, wherein the plurality of glass fibers are E-glass derivative fibers.

9. A fabric according to claim 1, wherein the organic materials are selected from thermosetting materials, thermoplastic materials, and mixtures thereof.

10. A fabric according to claim 9, wherein the organic materials are thermosetting materials selected from thermosetting polyesters, vinyl esters, epoxy materials, phenolics, aminoplasts, thermosetting polyurethanes and mixtures of any of the foregoing.

11. A fabric according to claim 1, wherein the organic materials are thermoplastic materials selected from thermoplastic polyesters, polycarbonates, polyolefins, acrylic polymers, polyamides, thermoplastic polyurethanes, vinyl polymers and mixtures of any of the foregoing.

12. A fabric according to claim 1, wherein the inorganic polymeric materials are selected from polyphosphazenes, polysilanes, polysiloxane, polygermanes, polymeric sulfur, polymeric selenium, silicones and mixtures of any of the foregoing.

13. A fabric according to claim 1, wherein the lamellar particles are inorganic.

14. A fabric according to claim 13, wherein the lamellar particles are selected from boron nitride, molybdenum disulfide, graphite, molybdenum diselenide, tantalum disulfide, tantalum diselenide, tungsten disulfide, tungsten diselenide, and mixtures of any of the foregoing.

15. A fabric according to claim 1, wherein the composite materials are selected from particles that having a hardness at their surface that is different from the hardness of the internal portions of the particle beneath its surface.

5 16. A fabric according to claim 15, wherein the composite materials are selected from particles formed from a primary material that is coated, clad or encapsulated with at least one secondary material.

10 17. A fabric according to claim 15, wherein the composite materials are selected from particles formed from a primary material that is coated, clad or encapsulated with a differing form of the primary material.

15 18. A fabric according to claim 1, wherein the plurality of discrete particles provide an interstitial space between at least one fiber and at least one adjacent fiber.

20 19. A fabric according to claim 1, wherein the plurality of discrete particles have an average particle size, measured according to laser scattering techniques, ranging from 0.1 to 5 microns.

20 20. A fabric according to claim 1, wherein the plurality of discrete particles comprise from 1 to 80 weight percent of the resin compatible coating composition on a total solids basis.

25 21. A fabric according to claim 20, wherein the plurality of discrete particles comprise from 20 to 60 weight percent of the resin compatible coating composition on a total solids basis.

30 22. A fabric according to claim 1, wherein the at least one lubricious material is selected from oils, waxes, and greases.

23. A fabric according to claim 1, wherein the at least one lubricious material comprises from 1 to 50 weight percent of the resin compatible coating composition on a total solids basis.

5 24. A fabric according to claim 1, wherein the at least one lubricious material is selected from comprises from 20 to 40 weight percent of the resin compatible coating composition on a total solids basis.

10 25. A fabric according to claim 1, wherein the at least one film-forming material is selected from organic polymeric materials, inorganic polymeric materials, and natural polymeric materials.

15 26. A fabric according to claim 25, wherein the at least one film-forming material is selected from thermoplastic materials and thermosetting materials.

27. A fabric according to claim 26, wherein the thermoplastic materials are selected from thermosetting polyesters, epoxy materials, vinyl esters, phenolics, aminoplasts, thermosetting polyurethanes and mixtures of any of the foregoing.

20 28. A fabric according to claim 26, wherein the thermosetting materials are selected from vinyl polymers, thermoplastic polyesters, polyolefins, polyamides, thermoplastic polyurethanes, acrylic polymers, and mixtures of any of the foregoing.

25 29. A fabric according to claim 1, wherein the at least one film-forming material comprises from 5 to 50 weight percent of the resin compatible coating composition on a total solids basis.

30 30. A fabric according to claim 29, wherein the at least one film-forming material comprises from 10 to 30 weight percent of the resin compatible coating composition on a total solids basis.

31. A fabric according to claim 1, wherein the resin compatible coating comprises a resin reactive diluent.

32. A fabric according to claim 31, wherein the resin reactive diluent is a lubricant comprising one or more functional groups capable of reacting with an epoxy resin system and selected from the group consisting of amine groups, alcohol groups, anhydride groups, acid groups and epoxy groups.

33. A fabric comprising at least one strand comprising a plurality of fibers and having a resin compatible coating composition on at least a portion of a surface of the fabric, the resin compatible coating composition comprising:

- (a) a plurality of particles comprising;
  - (i) at least one particle formed from at least one organic material; and
  - (ii) at least one particle formed from at least one inorganic material selected from boron nitride, graphite and metal dichalcogenides, wherein the plurality of particles have an average particle size sufficient to allow strand wet out;
- (b) at least one lubricious material different from the plurality of discrete particles; and
- (c) at least one film-forming material.

34. A fabric according to claim 33, wherein the at least one organic material is a polymeric organic material.

35. A fabric according to claim 34, wherein the polymeric organic material is a <sup>thermoplastic</sup> ~~thermosetting~~ material selected from vinyl polymers, thermoplastic polyesters, polyolefins, polyamides, thermoplastic polyurethanes, and acrylic polymers.

36. A fabric according to claim 35, wherein the polymeric organic material is an acrylic copolymer selected from copolymers of styrene and an acrylic monomer.

37. A fabric according to claim 33, wherein the plurality of particles have an average particle size, measured according to laser scattering techniques, ranging from 0.1 to 5 microns.

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38. A fabric according to claim 33, wherein the plurality of particles comprise from 1 to 80 weight percent of the resin compatible coating composition on a total solids basis.

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39. A fabric according to claim 38, wherein the plurality of particles comprise from 20 to 60 weight percent of the resin compatible coating composition on a total solids basis.

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40. A fabric according to claim 33, wherein the at least one lubricious material comprises from 1 to 50 weight percent of the resin compatible coating composition on a total solids basis.

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41. A fabric according to claim 40, wherein the at least one lubricious material comprises from 20 to 40 weight percent of the resin compatible coating composition on a total solids basis.

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42. A fabric according to claim 33, wherein the at least one film-forming material comprises from 5 to 50 weight percent of the resin compatible coating composition on a total solids basis.

43. A fabric according to claim 42, wherein the at least one film-forming material comprises from 10 to 30 weight percent of the resin compatible coating composition on a total solids basis.

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44. A fabric comprising at least one strand comprising a plurality of fibers and having a resin compatible coating composition on at least a portion of a surface of the fabric, wherein the resin compatible coating has a loss on ignition of ranging

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from 0.1 to 1.6, and an air permeability, measured according to ASTM D 737, of no greater than 10 standard cubic feet per minute per square foot.

45. A fabric according to claim 44, wherein the at least one fiber strand  
5 comprises at least one glass fiber.

46. A fabric according to claim 44, wherein the at least one fiber strand  
comprises a plurality of glass fibers.

10 47. A fabric according to claim 46, wherein the plurality of glass fibers are  
selected from E-glass fibers, D-glass fibers, S-glass fibers, Q-glass fibers, and E-  
glass derivative fibers.

15 48. A fabric according to claim 47, wherein the plurality of glass fibers are  
E-glass fibers.

49. A fabric according to claim 47, wherein the plurality of glass fibers are  
E-glass derivative fibers.

20 50. A fabric according to claim 44, wherein the resin compatible coating  
composition comprises a plurality of particles.

25 51. A fabric according to claim 50, wherein the particles are formed from  
materials selected from polymeric inorganic materials, non-polymeric inorganic  
materials, polymeric organic materials, non-polymeric organic materials, composite  
materials and mixtures of any of the foregoing.

30 52. A fabric according to claim 51, wherein the polymeric inorganic  
materials are selected from polyphosphazenes, polysilanes, polysiloxane,  
polygermanes, polymeric sulfur, polymeric selenium, silicones and mixtures of any  
of the foregoing.

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53. A fabric according to claim 51, wherein the non-polymeric inorganic materials are selected from graphite, metals, oxides, carbides, nitrides, borides, sulfides, silicates, carbonates, sulfates, hydroxides, and mixtures of any of the foregoing.
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54. A fabric according to claim 51, wherein the polymeric organic materials are selected from thermosetting materials and thermoplastic materials.
55. A fabric according to claim 51, wherein the polymeric organic materials are thermosetting materials selected from thermosetting polyesters, vinyl esters, epoxy materials, phenolics, aminoplasts, thermosetting polyurethanes and mixtures of any of the foregoing.
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56. A fabric according to claim 51, wherein the polymeric organic materials are thermoplastic materials selected from thermoplastic polyesters, polycarbonates, polyolefins, acrylic polymers, polyamides, thermoplastic polyurethanes, vinyl polymers and mixtures of any of the foregoing.
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57. A fabric according to claim 51, wherein the composite materials are selected from particles that have a hardness at their surface that is different from the hardness of the internal portions of the particle beneath its surface.
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58. A fabric according to claim 57, wherein the composite materials are selected from particles formed from a primary material that is coated, clad or encapsulated with at least one secondary material.
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59. A fabric according to claim 57, wherein the composite materials are selected from particles formed from a primary material that is coated, clad or encapsulated with a differing form of the primary material.
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60. A fabric according to claim 50, wherein the particles have a thermal conductivity of at least 1 Watt per meter K at a temperature of 300 K.



61. A fabric according to claim 50, wherein the particles have a Mohs' hardness value which does not exceed the Mohs' hardness value of any glass fiber in the at least one strand.

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62. A fabric according to claim 50, wherein the particles have an average particle size, measured according to laser scattering techniques, ranging from 0.1 to 5 microns.

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63. A reinforced composite comprising a fabric according to claim 44.

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